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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.         | CONFIRMATION NO.       |
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| 10/586,888  | 07/20/2006  | Gerhard Doering      | GK-ZEI-3307/500343.20328    | 2002                   |
| 26418   | 7590        | 03/24/2008           |                             |                        |
| REED SMITH, LLP<br>ATTN: PATENT RECORDS DEPARTMENT<br>599 LEXINGTON AVENUE, 29TH FLOOR<br>NEW YORK, NY 10022-7650 |             |                      | EXAMINER<br>GREECE, JAMES R |                        |
|   |             |                      | ART UNIT<br>2873            | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>03/24/2008     | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/586,888

**Applicant(s)**

DOERING ET AL.

**Examiner**

JAMES R. GREECE

**Art Unit**

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Detailed Action***

1. Applicant cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Status of the Application***

2. Claims 13-24 are pending in this application.

***Drawings***

3. There are no objections to the applicant's drawings at this time.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 13-15, 17-22, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogiwara et al (USPAT 4,697,908).

In regard to claim 13, Ogiwara et al teach the following as claimed:

a mounting unit which is provided with a diaphragm aperture; (for details see at least col. 2, lines 41-65) a stepper motor which is mounted at the mounting unit; (for details see at least numeral 2) a shutter element which is connected to the motor shaft of the stepper motor for opening and closing the diaphragm aperture; (for details see at least col. 7, lines 55-60)

said stepper motor being a two-phase stepper motor with a large full step angle; (for details see at least col. 4, lines 40-64) said two-phase stepper motor being connected to a control unit and carrying out the required movement of the shutter element at a short distance from the motor shaft, said movement being that a 180° rotation of the electromagnetic field occurs in a stator of the stepper motor, and therefore a corresponding rotation of the motor shaft by n full steps, is carried out by the control unit (for details see at least col. 4, lines 40-64).

In regard to claim 14, Ogihara et al teach the following as claimed:

Wherein a two- phase stepper motor with a claw-pole construction of the rotor and stator is used (for details see at least figures 1-2).

In regard to claim 15, Ogihara et al teach the following as claimed:

Wherein the movement of the shutter element is limited to a movement range of less than n full steps by a stop pin in the two end positions, respectively (for details see at least numerals 15b and 16).

In regard to claims 17-22, Ogihara et al teach the following as claimed:

Carrying out movement of the shutter element fastened to the motor shaft in that the 180 degree rotation of the electromagnetic field in the stator of the stepper motor, and, therefore, a corresponding rotation of the motor shaft by n full steps, is carried out by the control unit (for details see at least col. 4, lines 40-64).

Wherein a reversal of the current direction in the two windings of the stepper motor is carried out by the control unit for moving the shutter element that is fastened to the motor shaft.(for details see at least col. 4, lines 40-64).

Wherein a retarded reversal of the current direction in the individual windings of the stepper motor is carried out by the control unit for directed movement of the shutter element (for details see at least col. 4, lines 40-64).

Wherein a simultaneous reversal of the current direction in the individual windings of the stepper motor is carried out by the control unit for the directed movement of the shutter element when the mechanical rotation of the rotor is limited by stop pins to a movement range less than n full steps (for details see at least col. 4, lines 40-64 and figs 1-2).

wherein the winding currents of the individual windings of the stepper motor are reduced after reaching the end position of the shutter element, wherein the end position is reached after n full steps or when one of the stop pins is contacted (for details see at least col. 2, lines 41-68 and col. 3, lines 1-16).

wherein the winding currents of the individual windings of the stepper motor are switched off, respectively, after the end position of the shutter element is reached when the self-holding torque of the stepper motor is large enough to hold the shutter element in the respective end position (for details see at least col. 2, lines 41-68 and col. 3, lines 1-16).

In regard to claims 24, Ogihara et al teach the following as claimed:

wherein the windings of the stepper motor are acted upon by a predetermined current direction when the optical device is put into operation in order to ensure that the diaphragm opening is closed by the shutter element (for details see at least col. 4, lines 40-64).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogihara et al (USPAT 4,697,908) as applied to claim 1 and 17 above, and further in view of Tuchman (USPAT 6,466,353).

In regard to claim 16, Ogihara et al do not explicitly teach the following as claimed:

An end- position sensor which is fastened to the mounting unit and determines the position of the shutter element is provided in addition.

However Tuchman teaches this limitation in at least col. 5, lines 13-16.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Ogihara such that an end- position sensor which is fastened to the mounting unit and determines the position of the shutter element is provided in

addition as is taught by Tuchman for the predictable result of providing an inexpensive optical shutter capable of modulating light beams or particle streams at low frequencies.

In regard to claims 23, Ogihara et al do not explicitly teach the following as claimed:

The closing of the diaphragm aperture by the shutter element is ensured when the optical device is put into operation by evaluating the signal of the end-position sensor.

However Tuchman teaches this limitation in at least col. 3, lines 57-67 and col. 4 lines 1-11.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Ogihara such that the closing of the diaphragm aperture by the shutter element is ensured when the optical device is put into operation by evaluating the signal of the end-position sensor as is taught by Tuchman for the predictable result of providing an inexpensive optical shutter capable of modulating light beams or particle streams at low frequencies.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 13-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. GREECE whose telephone number is (571)272-3711. The examiner can normally be reached on M-Th 7:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James R Greece  
Patent Examiner  
571-272-3711

/J. R. G./  
Examiner, Art Unit 2873  
3/6/2008

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Supervisory Patent Examiner, Art Unit 2873